

**Amendments to the Claims**

Please amend claims 1, 6 and 9. Please add new claims 14 and 15. The Claim Listing below will replace all prior versions of the claims in the application:

**Claim Listing**

1. (Currently amended) A method for processing access channel signals in a digital wireless communication system comprising the steps of:
  - at a transmitter,
    - encoding pilot symbols [[in]] throughout a preamble portion of an access channel frame of information to be transmitted on the access channel; and
    - encoding data symbols in a payload portion of the access channel frame, the payload portion of the access channel frame also including pilot symbols interleaved with the data symbols, the preamble portion of the access channel frame preceding the payload portion.
2. (Original) A method as in Claim 1 additionally comprising the steps of,
  - at a receiver,
    - obtaining a pilot symbol phase estimate by feeding the pilot symbols in the preamble portion to a pilot correlation filter;
    - obtaining a data symbol estimate by feeding the data symbols in the payload portion to a data symbol correlator; and
    - using the pilot symbol phase estimate provided by the pilot correlation filter to synchronize detection of the data symbols.
3. (Original) A method as in Claim 2 additionally comprising the steps of, at a receiver:
  - extracting pilot symbols from the payload portion; and
  - performing a cross product operation with the pilot symbols embedded in the payload portion and the data symbols.

4. (Original) A method as in Claim 2 additionally comprising the steps of, at the receiver, extracting pilot symbols from the payload portion; and performing a cross product operation between the pilot symbols embedded in the payload portion and the data symbols output by the data symbol correlator.
5. (Original) A method as in Claim 1 wherein the pilot symbols are interspersed at regular intervals in the payload portion.
6. (Currently amended) A method as in Claim 2 wherein the ~~transmitter~~ receiver is located at a base station, and the ~~receiver~~ transmitter is located at one of a plurality of field units serviced by the base station at the same time.
7. (Original) A method as in Claim 2 additionally comprising the steps of:  
detecting the pilot symbols in the preamble portion with a pilot correlation matched filter having a transfer function matched to the pilot symbols.
8. (Original) A method as in Claim 2 additionally comprising the steps of:  
detecting the data symbols in the payload portion with a data correlation matched filter having a transfer characteristic matched to the data symbols.
9. (Currently amended) A method ~~as in Claim 2 additionally comprising the steps of:~~ for processing access channel signals in a digital wireless communication system comprising:  
at a transmitter,  
encoding pilot symbols in a preamble portion of an access channel  
frame of information to be transmitted on the access channel; and

encoding data symbols in a payload portion of the access channel frame, the payload portion of the access channel frame also including pilot symbols interleaved with the data symbols; and  
at a receiver,

operating a pair of pilot correlation matched filters to detect the pilot symbols in the preamble portion, the pilot correlation matched filters operating in ping pong such that one of the pilot correlation matched filters is processing a received signal while the other is loading filter coefficients;

obtaining a pilot symbol phase estimate by feeding the pilot symbols in the preamble portion to a pilot correlation filter;

obtaining a data symbol estimate by feeding the data symbols in the payload portion to a data symbol correlator; and

using the pilot symbol phase estimate provided by the pilot correlation filter to synchronize detection of the data symbols.

10. (Original) A method as in Claim 2 additionally comprising the steps of:
  - receiving a payload portion sequence of pilot symbols and data symbols;
  - separating the payload portion sequence into pilot symbols and data symbols using synchronization information derived from the pilot symbols in the preamble portion; and
  - comparing the separated pilot symbols and data symbols to detect information received.
11. (Original) A method as in Claim 10 wherein the step of comparing the separated pilot symbols and data symbols comprises performing a dot product of the separated pilot symbols and data symbols.

12. (Original) A method as in Claim 2 additionally comprising the step of, at the receiver, feeding a received preamble portion to a pilot correlation matched filter; and comparing the output of the correlation matched filter to a peak detector.
13. (Original) A method as in Claim 12 additionally comprising the step of:  
determining a time position of a plurality of peaks in the peak detector output; and  
setting a plurality of rake receivers to each of the detected peaks.
14. (New) A method as in Claim 1 wherein encoding pilot symbols throughout the preamble portion of the access channel frame further comprises:  
encoding alternating blocks of pilot symbols and predetermined code sequences throughout the preamble portion of the access channel frame.
15. (New) A method as in Claim 14 wherein the predetermined code sequences are Barker code sequences.